PART SIX

THE EXCAVATIONS AND FINDS FROM MOUNT BASTIONE TO MOUNT VENERE (1985-1992)

CHAPTER XV

THE *GLAREA* ROAD IN PREDOSA
(Archaeological zone "E")

In paragraph 2 of chapter VIII, we pointed out the reasons why we decided to search for the road along the stretch of ridge between mount Bastione and the Futa pass. We were convinced that if C. Flaminius had chosen this itinerary, he would have had to lay solid paving along this stretch of Apennine ridge to guarantee the transit of legionaries throughout the year.

These considerations proved to be founded not only because we discovered the Roman road, but also because it was entirely paved as we had predicted on the basis of the geological characteristics of the area.

Furthermore, this indirectly confirmed our considerations in the opposite sense about the other long stretch of ridge that from mount Bastione heads northwards to Bologna. We believed that the different characteristics of the soil, substantially compact and solid as far as Pieve del

The ridge descends from Pian di Balestra towards Madonna dei Fornelli (centre) where the glarea *road was found.*

Pino with its initial outcrops of limestone followed by sandstone and gravel, had eased the work of the Romans. In this area, it was not necessary to lay paving stones to ensure the road could be used all year round. Therefore, there was no point in looking for the remains of the paved road.

This conviction remained substantially the same for many years. Then we gradually began to think that perhaps there might be some slight indication to be found along that stretch of ridge north of Bastione. It was true that to achieve a compact and solid roadbed where the limestone outcrops coincided with the road route, it would have been enough to flatten the soil for the desired width without having to lay any paving. Because limestone crumbles easily under the feet of passing people and animals, it would have become so compact that it would have formed a rolled surface; and in this case, there would be nothing to find.

Nevertheless, the Romans must have consolidated the muddy ground where the limestone outcrops did not coincide with the route wanted by their engineers.

Therefore, we decided to guess what could have been the most practical, fastest, and at the same time, sufficiently solid and long-lasting technical solution adopted by the Romans in this type of situation.

They logically would have used the most readily available material; in this case, there were limestone outcrops that could supply a large quantity of material suitable for constructing the roadbed. However, limestone crumbles easily and a curb would have been necessary to ensure it did not disperse at the edges. The most straightforward system was to dig a 2.60-2.80 metre wide trench, deep enough to reach a layer of solid ground. The Romans then placed the necessary amount of limestone in the trench. This technique ensured the edges of the road were sufficiently contained and avoided the instalment of sandstone curbs (the nearest supply of sandstone was some distance away).

A typical example where an outcrop of limestone has been flattened to create a practical and solid roadbed. This one is 600 metres north of Predosa (archaeological zone "E") along the Roman route. It is obviously impossible to tell when the road was flattened. In the background lies the village of "Bonacca".

Furthermore, continuity was provided by simply flattening any limestone outcrops.

We were convinced the Romans adopted this construction technique along the points of the route near limestone outcrops. Therefore, any stretches of the *"glarea"* road retraced over the years by the mule track on the ridge must have sunk (we had noticed this phenomenon elsewhere) highlighting the edges of the *"glarea"* road.

In 1986, with this vague hope we started a number of explorations along the stretch between mount Bastione (Pian di Balestra) and mount Venere.

As usual, we started by trying to identify the route of the ancient transapennine mule track that winds along the ridge. It was fundamental not to confuse it with the numerous alternative routes created to complete the local road system or because of natural events. The straight-line principle was an essential element during this process to retrace the remains of the "*glarea"* road at the edges of the sunken hollow created by the mule track. The mule track had to follow a straight course because it retraced the middle line of the Roman road, leaving the clues we were looking for at the edges. If this was not the case, we certainly would not have found any clues. We also used the line of the ridge top as a reference, knowing that the Romans preferred to build their roads on top of the ridge, as proved by the paved road unearthed further south.

Bearing in mind these circumstances, we explored the ridge that descends from Pian di Balestra (1,149 above sea level) towards Madonna dei Fornelli (798 above sea level). We did not pause in places where it was obvious that there was a natural outcrop of limestone, almost certainly flattened by the Romans. We hoped to find the areas between these outcrops where the nature of the soil would have required a consistent layer of limestone.

Finally, in Predosa[1], about 1.5 km north of Pian di Balestra, we identified a long straight furrow, lying along our route,

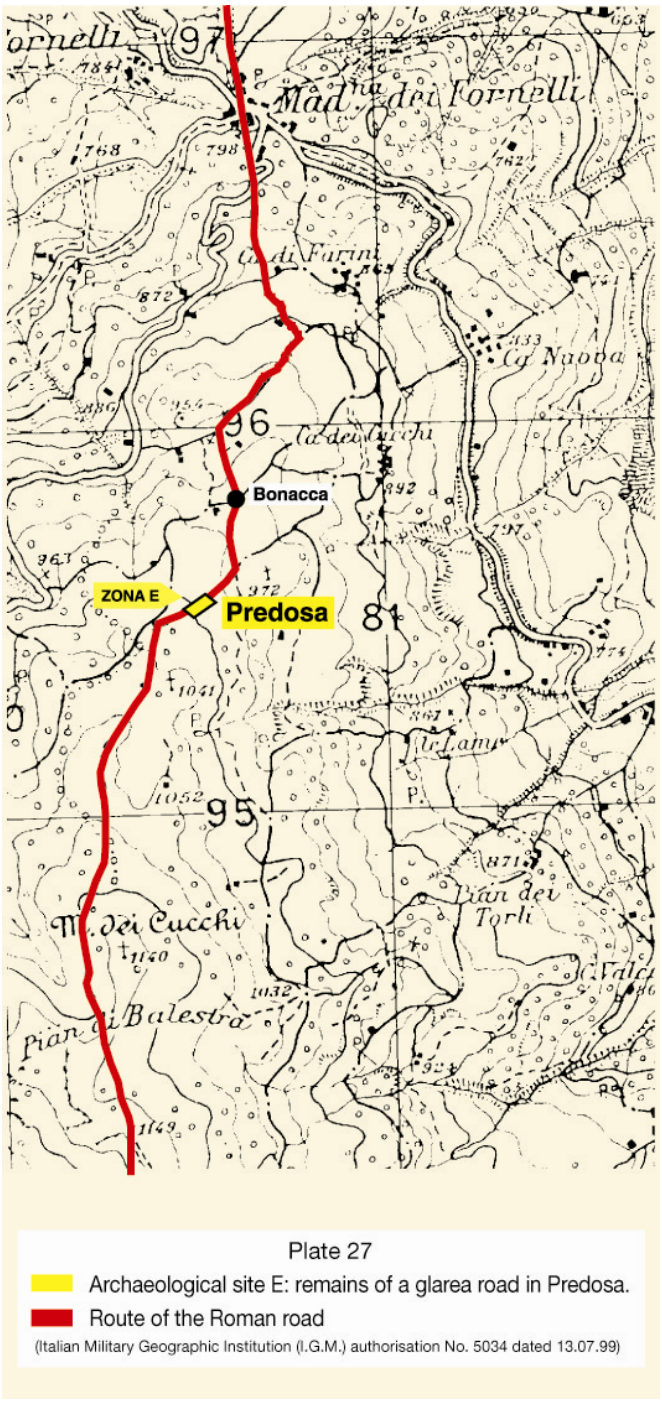


Plate 27

Archaeological site E: remains of a glarea road in Predosa.

Route of the Roman road

(Italian Military Geographic Institution (I.G.M.) authorisation No. 5034 dated 13.07.99)

completely blocked by dense and varied vegetation consisting in a wall of impassable thorny plants.

We noticed that this area substantially coincided with the ridge (which was also very wide in this area) and we decided to clear a stretch of the furrow and carry out a series of test excavations.

In March 1987, before the plants had begun to shoot, we toiled to clear an opening about 20 metres long,

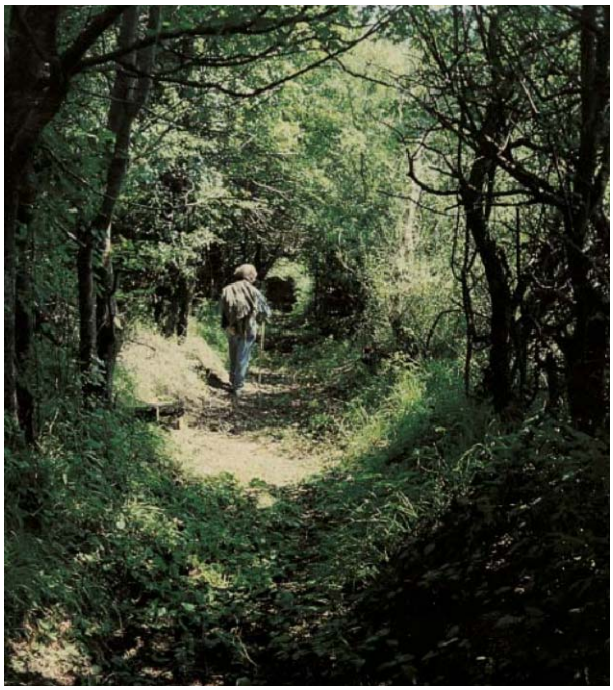
[1] It is still possible to see the remains of a brick house called Predosa, which was inhabited until 1950 by local farmers.

Predosa (archaeological zone "E"): *the long-abandoned mule track was completely obstructed by thorny bushes and plants before we started our search for the* glarea *road.*

taking care to remove all the bushes from the side of the track. After removing the sods of earth, small limestone fragments appeared; we noticed that the layer of limestone was only 30-35 cm thick: below was untouched soil and above a layer of earth and humus about 25-30 cm deep. We continued along the furrow lengthways and cleared about 10 metres on one side to ensure the limestone "lens" continued at a constant level and with an identical thickness.

This was not natural sediment because the soil was untouched below the layer of limestone; it was material installed on the site to create a road surface.

This theory was then confirmed by the fact that the lower part of the layer consisted in larger fragments compared to the upper part, in compliance with the construction techniques of *"glaree"* roads: Larger stones were placed below and smaller stones on the surface. Sand was often spread on top to ensure the road surface was perfectly compact.



Predosa (archaeological zone "E"): *the tunnel opened in the thick vegetation providing access to the mule track that follows the usual perfectly straight Roman* glarea *road exactly.*

Predosa (archaeological zone "E"): *after carefully clearing the side of the hollowed mule track, a layer of small limestone fragments appeared which continues along the track: obvious remains of the* glarea *road.*

Predosa (archaeological zone "E"): *the remains of the* glarea *road. Note that: 1) the larger stones are on the bottom; 2) the untouched soil beneath; 3) a layer of earth and humus above testifying the centuries-old sedimentation.*

These were certainly the remains of a "*glarea*" road built to perfection.

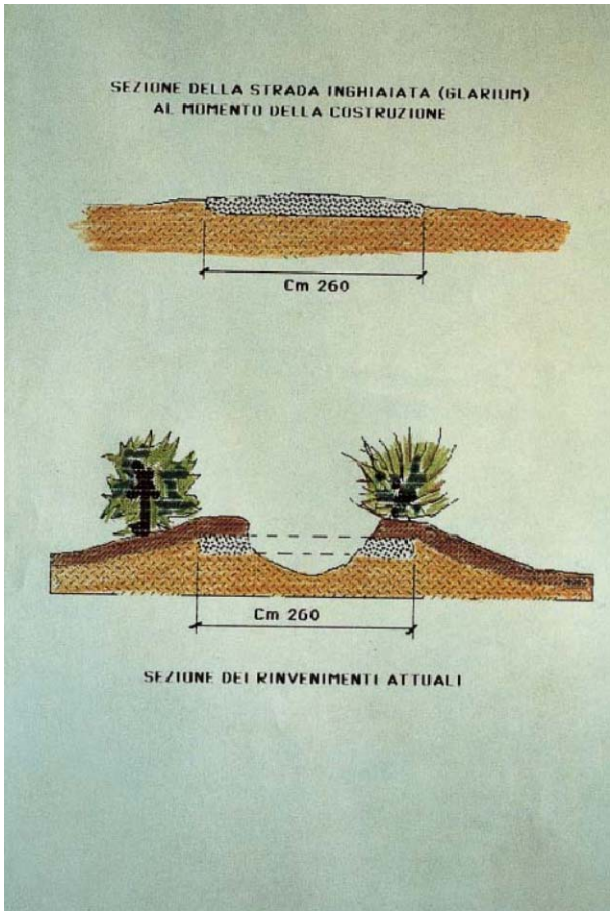
This type of road was easy to maintain: if the surface was damaged by traffic or the rain, it could be remade by spreading more limestone from the nearby quarries.

When maintenance was no longer carried out on the "*glarea"* road, it rapidly deteriorated. Over the centuries, it progressively sunk at the centre due to the constant transit of people and animals and was washed away by rainwater. Thus, the solid road became impracticable, a sunken furrow between two high banks of earth. It now looks more like the bed of a torrent than a road, but its edges have preserved proof of its original structure and it still follows a straight line.

To highlight the straightness of its line, in 1996-1997, we reopened this entire stretch of "*glarea"* road, providing continuity to the Roman route interrupted by the growth of wild trees, bushes and thorny plants. The vegetation was so dense that it took some ten days for us to open a 600-metre long tunnel through the thorny greenery [2].

Nowadays, when travelling along the road, as it unfurls along the top of the ridge, one truly has the sensation of being on the axis of an important transapennine route, offering an incomparable view and allowing the eye to wander far into the distance.

Although our conclusions may appear unmotivated due to the scant finds and their purely circumstantial validity, such scepticism is only justified if these finds are viewed in isolation, ignoring their orographic, topographic and environmental context; forgetting the foundation on which our certainties stand, and that is all the archaeological Roman finds unearthed along the same route further north and further south.



Predosa (archaeological zone "E"): *above: graphic representation of the* glarea *road when it was built. Below: the present-day section of the* glarea *road.*

[2] We would like to thank out friend, Amos Lelli, whose great efforts helped us to carry out this tiring work.

CHAPTER XVI

THE ROMAN BRICK KILN IN SASSOROSSO (archaeological zone "F")

Along the ridge declining northwards towards Madonna dei Fornelli[1] we found no other clues to testify the presence of the *glarea* road, probably because limestone outcrops near the route are much more common. The road was probably made here by simply flattening the limestone sediments and, logically, it is no longer possible to prove whether this was done during Roman, medieval or modern times.

The intense urbanisation around Madonna dei Fornelli prevented us from carrying out any explorations. All we could do was give credit to local tradition, whereby the Roman road passed through the centre of the town, exactly along the straight road that heads north towards the watershed between the torrents Savena and Sambro, called "Via Romana Antica" [Ancient Roman Road][2].

We continued to explore northwards, but the limestone terrain banished any hope of significant finds. The unvarying straightness of the present-day road to the village of Le Croci, across mount Galletto, is the only testimony of the Roman ascendancy of the route. In fact no other dirt road or mule track linking the numerous and isolated mountain villages on our Apennines is as straight as this road.

When we were convinced that there were no other links to add to the chain of finds we had uncovered, news reached us of a very important casual discovery made on this ridge, south of mount Venere, thanks to the sharp spirit of observation of Nello Benni from Monzuno.

In the summer of 1990, work was being carried out by A.CO.SER (a company based in Bologna) to lay a gas pipeline from Monzuno to Madonna dei Fornelli. The planned southward route of the pipeline was along the straight ridge top (the shortest route). Therefore, it retraced the

The straight road named "Via Romana Antica" *which goes through the centre of Madonna dei Fornelli and which coincides with the Roman route.*

[1] Madonna dei Fornelli is in the Municipality of S. Benedetto Val di Sambro; it is a charming summer holiday village located on the same ridge as the Roman route and has now become a stopping point for everyone walking along the route from Bologna to Fiesole.
[2] See note 5 in the preliminary chapter.

The name of the main road through Madonna dei Fornelli codifies an ancient oral tradition handed down through the centuries.

Roman road, now consisting in a gravel road to "Le Croci", where it becomes a cart road which is only accessible to four-wheel drive vehicles. The excavation work took place before the pipes were laid, so that a 200-300 metre stretch remained open and on view to everyone for a number of days.

On Saturday 4 August 1990, Benni went to look at the work in progress to see if any remains had been uncovered from the last World War.

When he reached a place called "Sassrosso", south of mount Venere, near a large Telecom antenna installed on top of the ridge, he noticed that inside the excavation there were a number of fragments of curved and flat roof tiles, which turned out to be the remains of a brick kiln. Furthermore, a large sandstone block measuring about two metres by 15 centimetres thick emerged from the uphill wall of the excavation.

Mr. Benni was surprised by the existence of a brick kiln in this location, because although he was from Monzuno, no memory of it had ever reached him. Thus believing that it must be very old, he returned to the site the next day equipped with suitable tools to enlarge the excavation, taking advantage of the fact that the site was closed. In just a short time, he unearthed numerous flat roof tiles, shapeless fragments of fired clay and some small wood charcoals taken from the presumed firebox.

During the following days, thanks to Dante Sabattini, who worked for E.N.E.A. in Brasimone, we were informed about the find.

Unfortunately, when we reached the place, A.CO.SER. had already laid the pipelines and closed the excavation. Our disappointment was great, well aware that we could not reopen the excavation on our own initiative,

1995: *The cart road from Madonna dei Fornelli heads north in a straight line over mount Galletto retracing the Roman route. In 1998, ten wind turbines were installed on the peak of mount Galletto for the production of electricity.*

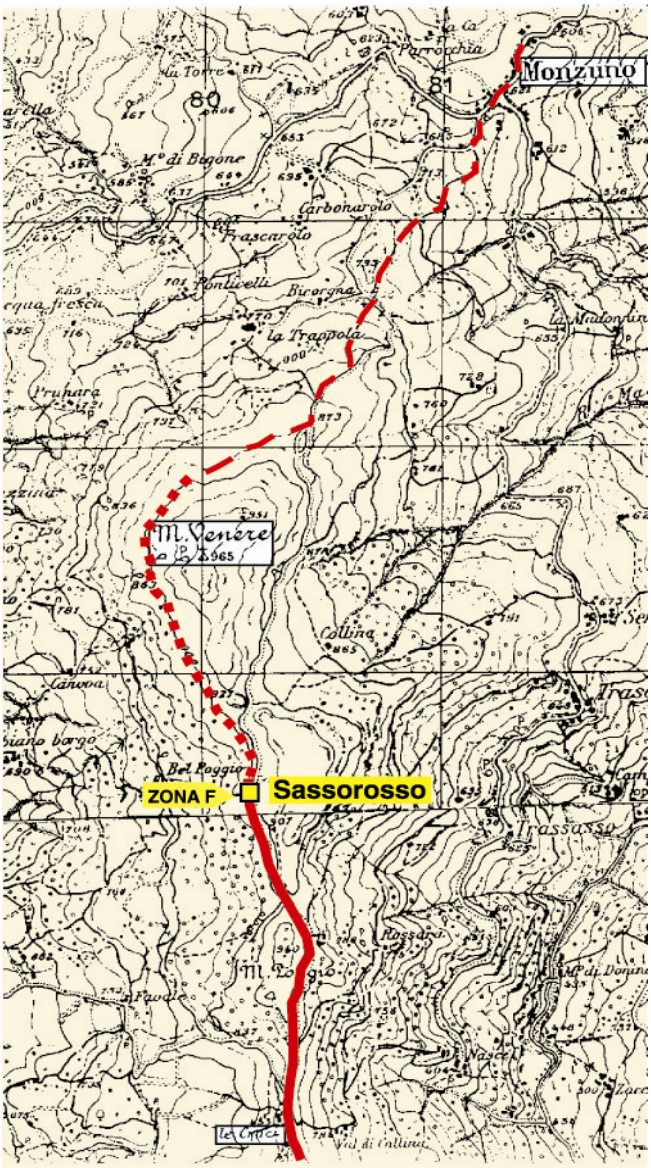


Plate 28

Archaeological site F: remains of a Roman kiln for the production of bricks in Sassorosso.

The route of the Roman road.

Probable continuation of the Roman road.

(Italian Military Geographic Institution (I.G.M.) authorisation No. 5034 dated 13.07.99)

also because this would have affected the municipal road to Le Croci. Fortunately, Benni was still in possession of the carbonaceous fragments and Dante Sabattini sent them to the C/14 laboratory of E.N.E.A. in Bologna.
Agostino Salomoni (who we would like to thank) carried out the dating and these are his exact words [3]: *"there was a very small quantity of clean carbon (less than 0.3 grams) and therefore, it was not possible to obtain a good dating (the margin of error is 35 years). The results of the dating are as follows: 100 B.C. give or take 250 (that is the age of the find is between 330 B.C. and 130 A.D.)"*.

The wide margin of the time variable pointed out by Salomoni dates the find between 350 B.C. and 150 A.D. and this is very significant for our research. We certainly hope that a second dating will one day be possible, based on a sufficient quantity of carbon samples to provide more precise results. Nevertheless, thanks to these results it is possible to make a number of considerations proving that this ridge was used in antiquity.

If the oldest theorised date is considered reliable, the construction of the brick kiln must be attributed to the Etruscans or Celts. This would prove that this ridge road was used in pre-Roman times and that it is an archaeological treasure that must not be lost[4].

Sassorosso (archaeological zone "F"): *Mr. Nello Benni indicates the exact point where he found the remains of the Roman kiln when, in August 1990, A.CO.SER carried out a series of excavations to lay a gas pipeline between Monzuno and Madonna dei Fornelli.*

[3] The results of the dating were sent in a letter on 18 February 1991 by Agostino Salomoni (document 12).

Sassorosso (archaeological zone "F"): *the excavation by A.CO.SER to lay the gas pipeline unearthed the remains of a Roman brick kiln* (photograph by N. Benni).

However, the kiln was very probably Roman. It was evidently built here because there was an abundant supply of the clay needed to make the bricks and wood to fire the clay. Furthermore, it was on a transapennine road that made it easy to carry the bricks to the rapidly expanding cities on the plains.

The basic date of 100 years B.C. is probably the most reliable for a number of reasons:
- the carbon sample evidently refers to one of the last fires lit in the kiln (that is, when the kiln was abandoned); therefore, if the installation was abandoned in 100 B.C., it must have been built at least 30-40 years earlier;
- considering the year 100 B.C. as *"ante quem"*, the installation must date back to several decades earlier and that is, just after the construction of the road in 187 B.C. It is probable that the Romans set up artisan activities along their new thoroughfare, in locations near the raw materials needed by the construction industry, such as lime, bricks and wood[4]. Readers will remember that the limekilns on Piana degli Ossi[5] were also next to the Roman road.

The abandonment of the kiln could be attributed to market requirements.

After decades of activity, the demand for construction materials may have diminished or even dried up, due to competition from other kilns built later on the plains, nearer to the urban centres undergoing expansion in the 2nd century B.C. along the axis of the Via Aemilia. This perhaps made the market price drop and the cost of carriage from mount Venere to Bologna and the surrounding area meant these installations were no longer profitable.

It is worth underlining that the place where the kiln was found is called "Sassorosso" [Red Stone]. This name was certainly coined during past centuries when in the surrounding fields

Sassorosso (archaeological zone "F"): *a piece of flat roof tile found by Nello Benni at the base of the Roman kiln. It is 60 cm long, corresponding to two Roman feet.*

[4] We do not think it can be attributed to the Apennine-Ligurians due to their known lack of industrialisation and for the aspect of the clay and the technique used to fire the unearthed flat roof tiles.
[5] Refer to our account of this location in chapter X (archaeological zone "B").

numerous pieces of brick (flat and curved roof tiles, etc.) were turned up by the plough and which farmers believed to be red stones[6].

This mistake proves that no memory of the kiln survived: otherwise, the place would probably be named after this type of industry, such as "fornace" [kiln], "forni" [kilns], etc.

This means the kiln was abandoned in antiquity and thus makes the dating more reliable (100 B.C.)

Even in terms of place names, the parallel with Piana degli Ossi is surprising.

Here as on Piana degli Ossi, the memory of the kilns has not been handed down to prosperity. The name of both places comes from the emergence of residues on the surface, which distinguish the areas from their surroundings: in the first case, the presumed "bones" were lime residues; in the second, the presumed "red stones" were pieces of flat and curved roof tiles.

However, regardless of any subjective considerations, the fact remains that a Roman kiln was identified in Sassorosso, which is still completely buried and we hope it will soon be excavated.

[6] Even now, it is still possible to see these brick fragments sticking out from the grass in the surrounding fields.